

An Integrated Biological Control System at Hanford

❖ A. R. Johnson

❖ M. J. Elsen



U.S. DEPARTMENT OF
ENERGY

Biological Vectors at Hanford

- 81 species vectors (implicated in transfer) identified
 - Vegetation (30 species)
 - Wildlife (51 species)
- Approximately 5,600 identified instances of biological intrusion since site operations began
- Examples include tumbleweed uptake of radionuclide's, mammal ingestion of contamination and various other vectors
- Radionuclide's were primarily mixed fission products such as strontium-90 and cesium-137



U.S. DEPARTMENT OF
ENERGY



U.S. DEPARTMENT OF
ENERGY



U.S. DEPARTMENT OF
ENERGY



U.S. DEPARTMENT OF
ENERGY



U.S. DEPARTMENT OF
ENERGY



U.S. DEPARTMENT OF
ENERGY



U.S. DEPARTMENT OF
ENERGY



U.S. DEPARTMENT OF
ENERGY



U.S. DEPARTMENT OF
ENERGY

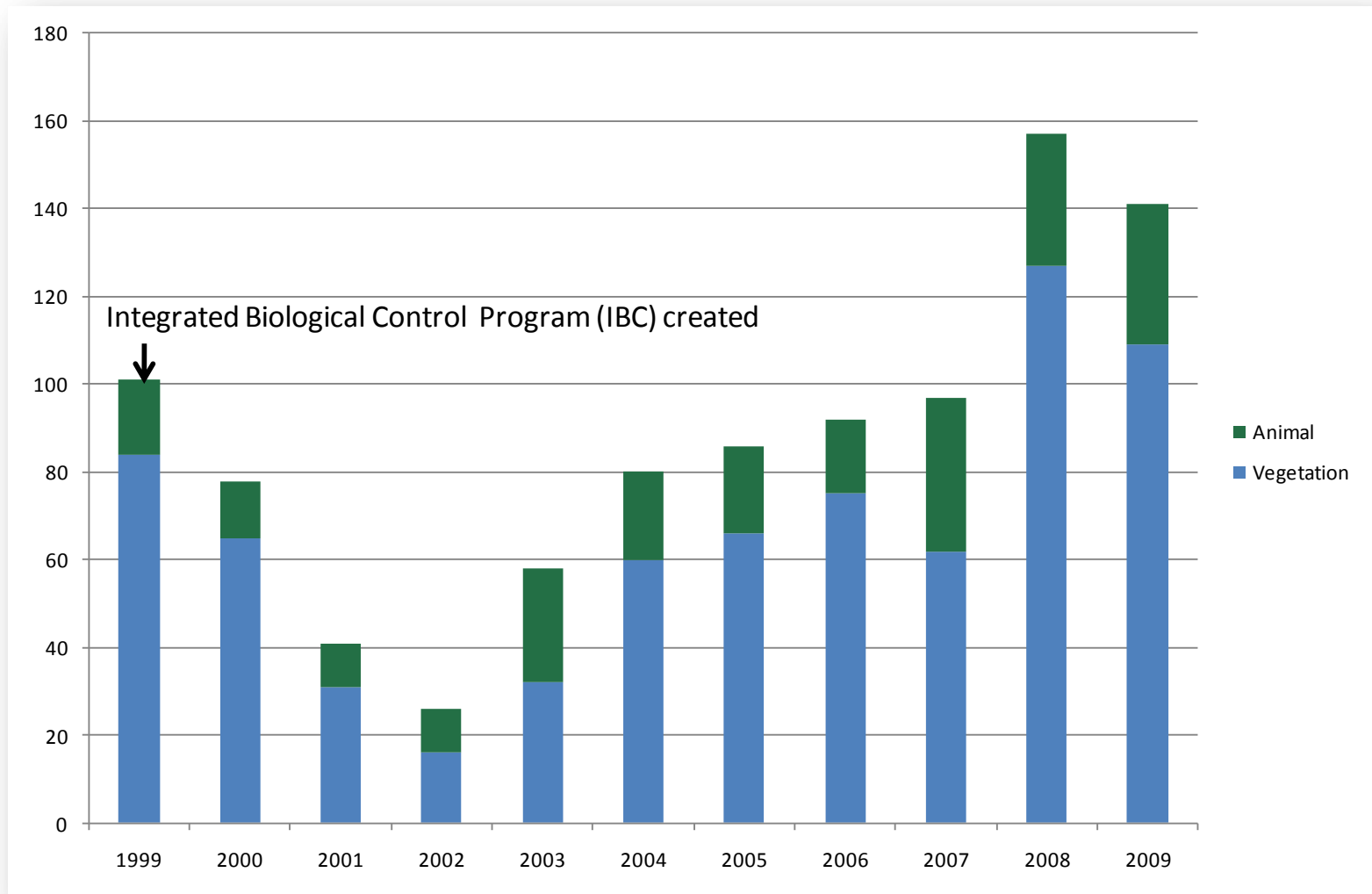


U.S. DEPARTMENT OF
ENERGY

Biotic Contamination

- Biotic contamination events from 1998 to 2002 decreased by 80%
- Trends increased from 2003 through 2008 but began to decline in 2009
- Increase in contaminated vegetation due to chemical resistance evaluated by BASF Chemical Company resulted in change of herbicide products
- Increase in post-2006 animal incidents due to discovery of legacy contamination during increasing D&D activities

Biota Contamination Events



2009 Biota Control

- Responded to ~26,000 animal control requests (scorpions, mosquitoes, snakes, mice, etc); ~ 85% proactive health-issue related
- Removed ~1,800 animals from operations areas, offices, etc (0 were contaminated)
- Sprayed ~7,900 acres (including ~760 acres for noxious weeds)
- On-call (376-PEST) availability of licensed staff has resulted in decreased harborage for pest species

Biota Control (cont.)

- Responded to more than 200 facility requests for tumbleweed cleanup
- Continued pest control and response
- Continued restoration of vegetation: ~500 acres
- Identified, posted, and mowed over ~170 acres of waste transfer lines
- Independent assessment of program effectiveness by off-site toxicologist

That's Owl Folks



U.S. DEPARTMENT OF
ENERGY